

CLAIMS

What is claimed is:

1. A drum washing machine, comprising:
a water tub to contain wash water;
a rotary drum located in the water tub to partially surround the wash water contained in the water tub;
a water supplier to supply the wash water into the water tub and to supply the wash water into the rotary drum directly; and
a controller to control the water supplier to supply the wash water into the water tub and the rotary drum, respectively, while washing laundry, which has been placed in the rotary drum.
2. The drum washing machine as set forth in claim 1, further comprising:
a drum driver to rotate the rotary drum; and
a circulator to supply the wash water contained in the water tub into the rotary drum.
3. The drum washing machine as set forth in claim 2, wherein the controller controls the drum driver and the circulator to mix the wash water contained in the water tub with the wash water of the rotary drum and to supply the mixed wash water in the rotary drum thereafter.
4. The drum washing machine as set forth in claim 2, wherein the controller controls the drum driver to wash laundry using only the wash water supplied into the rotary drum.
5. The drum washing machine as set forth in claim 1, wherein the rotary drum comprises a plurality of perforations to drain the wash water while the rotary drum is rotated and is positioned to be inclined to partially surround the wash water while the rotary drum is stopped.
6. The drum washing machine as set forth in claim 5, wherein the perforations are formed along a radially outer portion of a front wall of the rotary drum.

7. The drum washing machine as set forth in claim 3, further comprising a heater to heat the wash water contained in the water tub, wherein the controller controls the heater to heat the contained wash water and controls the circulator to supply the heated wash water to the rotary drum.

8. The drum washing machine as set forth in claim 7, wherein the heater is an electric heater controlled by the controller.

9. The drum washing machine as set forth in claim 7, further comprising a water temperature sensor to detect temperature of the wash water contained in the water tub, wherein the controller controls the heater to heat the contained wash water in stages until the water temperature detected by the water temperature sensor reaches a set temperature.

10. The drum washing machine as set forth in claim 9, further comprising a washing course setting unit to set a washing course of the laundry, wherein the controller determines the set temperature corresponding to the washing course set by the washing course setting unit.

11. The drum washing machine as set forth in claim 10, further comprising a storage unit to store information about the set temperature corresponding to the washing course, wherein the controller recognizes the set temperature by searching the storage unit.

12. A method of controlling a drum washing machine, the drum washing machine having a water tub to contain wash water and a rotary drum located in the water tub to contain the wash water while the washing machine is stopped and to drain the contained water while the washing machine is rotated, comprising:

producing detergent solution by supplying the wash water and detergent into the water tub; and

performing a main washing operation to wash laundry that has been placed in the rotary drum using the produced detergent solution and the wash water contained in the rotary drum.

13. The method as set forth in claim 12, further comprising performing a rough washing operation to soak the laundry by supplying the wash water into the rotary drum and operating the rotary drum prior to the main washing operation.

14. The method as set forth in claim 13, further comprising:
 - mixing the wash water used in the rough washing operation with the wash water contained in the water tub by draining the wash water, which is used in the rough washing operation, from the rotary drum; and
 - supplying the mixed wash water into the rotary drum to be used in the main washing operation.
15. The method as set forth in claim 14, further comprising heating the mixed wash water by operating an electric heater.
16. The method as set forth in claim 15, wherein the heating of the mixed water comprises:
 - detecting temperature of the heated wash water; and
 - heating the heated wash water in stages until the heated wash water reaches a set temperature.
17. The method as set forth in claim 16, further comprising performing a preliminary washing operation by rotating the rotary drum while heating the mixed water in stages, wherein the main washing operation is performed after the preliminary washing operation has been performed.
18. A drum washing machine, including a water tub to contain wash water and a rotary drum coaxially located in the water tub to partially surround the wash water contained in the water tub and to rotate in various washing operations, comprising;
 - a water supplier to supply the wash water into the water tub and the rotary drum;
 - a circulator to circulate the wash water; and
 - a controller to control the water supplier to supply the wash water into the water tub and the rotary drum, respectively, while washing laundry, which has been placed in the rotary drum, and to control the circulator to mix the wash water contained in the water tub with the wash water contained in the rotary drum.
19. The drum washing machine as set forth in claim 18, further comprising a drum driver, to rotate the rotary drum, wherein the drum driver is controlled by the controller.

20. The drum washing machine as set forth in claim 18, wherein the rotary drum comprises a perforation to drain the wash water while the rotary drum is rotated, the rotary drum being inclined so as to partially surround the wash water while the rotary drum is stopped.

21. The drum washing machine as set forth in claim 20, wherein the perforation is plural in number and formed along a radially outer portion of a front wall of the rotary drum.

22. The drum washing machine as set forth in claim 18, further comprising:
a heater to heat the wash water contained in the water tub;
a water temperature sensor to detect temperature of the wash water contained in the water tub;
a washing course setting unit to set a washing course of the laundry; and
a storage unit to store information about the set temperature corresponding to the washing course.

23. The drum washing machine as set forth in claim 22, wherein
the controller controls the heater to heat the contained wash water and controls the circulator to supply the heated wash water to the rotary drum,
the controller controls the heater to heat the contained wash water in stages until the water temperature detected by the water temperature sensor reaches a set temperature,
the controller determines the set temperature corresponding to the washing course set by the washing course setting unit, and
the controller recognizes the set temperature by searching the storage unit.

24. The drum washing machine as set forth in claim 23, wherein the heater is an electric heater controlled by the controller.

25. A method of controlling a drum washing machine, the drum washing machine having a water tub to contain wash water and a rotary drum coaxially located in the water tub to rotate within the water tub and to partially surround the wash water, comprising:
determining if a temperature of the wash water is greater than a set temperature;
performing a preliminary washing operation with reheated wash water, if the temperature of the wash water is not greater than a set temperature; and

performing a main washing operation if the temperature of the wash water is greater than the set temperature.

26. The method as set forth in claim 25, further comprising:
setting a washing course before the determining operation; and
performing a rough washing operation before the determining operation.

27. The method as set forth in claim 25, further comprising dissolving a detergent in water to produce the wash water.

28. The method as set forth in claim 25, further comprising draining the wash water from the rotary drum before the determining operation.

29. The method as set forth in claim 25, wherein the performing the preliminary washing operation comprises spraying the reheated wash water into the rotary drum.